



ETHERLINE® FD P FC Cat. 5

DB2170894

valid from: 05.11.2012

Application

ETHERLINE® FD P FC 2 x 2 x AWG 22/7 is a highly flexible CATEGORY 5 high speed data cable of halogen free materials for industrial usage. The transmission properties are acc. to the standards EIA/TIA-568, IEC 61156-6, TSB-36 and ISO/IEC 11801 for connections according to class D. The screening ensures a high transmission reliability in areas with a high load of electromagnetic capacity. The PUR jacket is resistant against mineral oils, fats, abrasion and atmospheric UV radiation. The cable is designed for applications in power chains and on permanently moved machine parts in dry and damp areas.

Approvals: c(UL)us, type CMX acc. to UL 444 and VW-1 acc. to UL 1581

Design

Conductor	tinned copper, fine-wire stranded 7 x ca. 0,25 mm ϕ (7/30 AWG), ca. 0.75 mm conductor ϕ (22 AWG)
Insulation	PE, ca. 1.5 mm outer ϕ
Core identification code	acc. to IEC 708-1; white, yellow, blue, orange
Stranding	star quad
Wrapping	plastic tape
Inner sheath	halogen free compound FRNC, ca. ϕ 3,9 mm
Screening	plastic laminated aluminum foil <u>on top:</u> braid of copper wire, tinned wire 0,10 mm – 0,15 mm, coverage 85 % \pm 5 %
Outer sheath	PUR halogen free and flame retardant compound, green RAL 6018, sheath- thickness ca. 0.9 mm, outer ϕ : ca. 6.5 mm

Electrical properties at 20° C

Resistance (loop)	max. 120 Ω /km, acc. to VDE 0812
Insulation resistance	min. 0.5 G Ω xkm
Mutual capacitance	nom. 52 nF/km (at 800 Hz)
Characteristic impedance	100 Ω \pm 15 Ω (1MHz up to 100 MHz)
Operating peak voltage	100 V (not for power purposes)
Velocity of propagation	ca. 0.67 c
Signal propagation time	<534 ns/100m
Delay difference	<30 ns/100m
Test voltage (rms 50 Hz, 1 minute)	core/core: 700 V core/screening: 700 V



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Transmission properties

f [MHz]	Attenuation max. [dB/100m]	NEXT [dB/100m]
1	2.1	65.3
4	4.0	56.3
10	6.3	50.3
16	8.0	47.3
20	9.0	45.8
31.25	11.4	42.9
62.5	16.5	38.4
100	21.3	35.3

Electrical requirements acc. to EN 50288-2-1

Mechanical and thermal properties

Minimum bending radius	8 x cable Ø
Permissible temperature range	moved: -20° C up to +60° C fixed installation: -30° C up to +70° C
Flame propagation	flame retardant acc. UL 1581 (VW-1)
Halogen free	halogen free acc. to VDE 0472-815
General requirements	Dangerous and forbidden substances acc. to RoHS directive (2002/95/EG) are not allowed to the manufacturing.